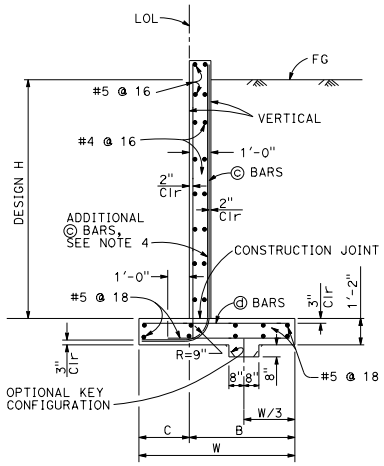
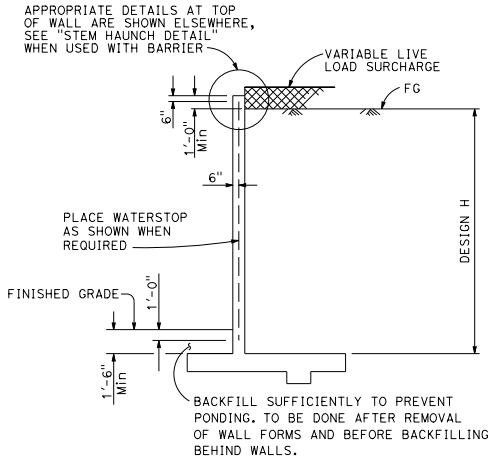
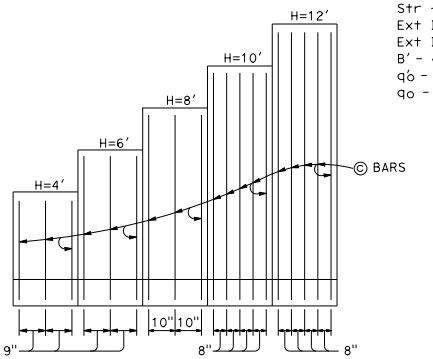


SPREAD FOOTING SECTION

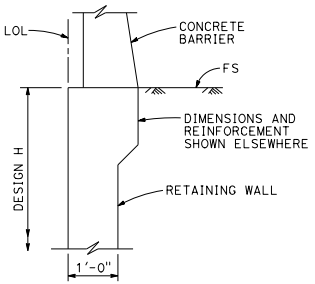
Place concrete in toe against undisturbed material, except as permitted by the Engineer.



DESIGN SECTION



ELEVATION



STEM HAUNCH DETAIL

TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA					
DESIGN H	4'	6'	8'	10'	12'
W	7'-0"	7'-0"	7'-3"	7'-5"	8'-2"
C	2'-3"	2'-3"	2'-3"	2'-5"	2'-7"
B	4'-9"	4'-9"	5'-0"	5'-0"	5'-7"
Ⓒ BARS	#6 @ 9	#6 @ 9	#7 @ 10	#7 @ 8	#7 @ 8
Ⓓ BARS	#5 @ 9	#5 @ 9	#6 @ 10	#7 @ 8	#7 @ 8
Ser: B', q_o	6.7, 0.8	6.7, 1.0	6.3, 1.3	5.8, 1.6	6.2, 1.9
Str: B', q_o	6.6, 1.6	5.2, 1.7	3.7, 2.2	2.8, 3.3	3.0, 3.9
Ext I: B', q_o	5.6, 0.9	4.8, 1.4	4.1, 2.0	3.1, 3.2	2.7, 4.5
Ext II: B', q_o	2.8, 1.9	2.7, 2.5	2.8, 3.0	2.6, 3.7	3.4, 3.6

SYMBOLS:

Ser - service limit state I
Str - strength limit state I
Ext I - extreme event limit state I
Ext II - extreme event limit state II
B' - effective footing width (ft)
q_o' - net bearing stress (ksf), OG assumed to be FG at toe
q_o - gross uniform bearing stress (ksf)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER
May 31, 2018
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Gary Wang
No. C58298
Exp. 6-30-18
CIVIL
STATE OF CALIFORNIA

DESIGN CONDITIONS:

Design H may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in the table.

DESIGN NOTES:

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments

LS: Varied surcharge on level ground surface

DC: Stem Architectural Treatment of thickness up to 6" of concrete (75 psf) considered

CT: 54 kip transverse force applied at He = 32", distributed over 10 feet at the top of wall and 1 : 1 distribution down and outward. Distribution below footing taken no less than 40'.

SEISMIC: $k_h = 0.2$, $k_v = 0.0$

SOIL: $\phi = 34°$, $\gamma = 120$ pcf

REINFORCED CONCRETE: f'c = 3,600 psi, fy = 60,000 psi

LOAD COMBINATIONS AND LIMIT STATES:

Service I	Q = 1.00DC+1.00EV+1.00EH+1.00LS
Strength I	Q = αDC+βEV+ηEH+1.75LS
Extreme I	Q = 1.00DC+1.00EV+1.00EH+1.00EQD+1.00EQE
Extreme II	Q = 1.00DC+1.00EV+1.00EH+1.00CT

Where:

Q:	Force Effects
α:	1.25 or 0.90, Whichever Controls Design
β:	1.35 or 1.00, Whichever Controls Design
η:	1.50 or 0.90, Whichever Controls Design
DC:	Dead Load of Structure Components
EH:	Horizontal Earth Fill Pressure
EV:	Vertical Earth Pressure from Earth Fill Weight
LS:	Live Load Surcharge
EQE:	Seismic Earth Pressure
EQD:	Soil and Structural and Nonstructural Components Inertia
CT:	Vehicular Collision Force

NOTES:

1. For details not shown and drainage notes see B3-5
2. For wall stem joint details see B0-3 3-3 and B0-3 3-4
3. At Ⓒ bars:
   H ≤ 6', no splices are allowed within 1'-8" above the top of footing.
   H > 6', no splices are allowed within H/4 above the top of footing.
4. Provide #6 @ 8" Ⓒ bars in addition to tabulated Ⓒ bars over a distance of 8'-0" measured from all expansion joints, begin wall and end wall location.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

RETAINING WALL TYPE 1A (CASE 1)

NO SCALE

B3-3A

2018 STANDARD PLAN B3-3A

1-29-18